

Long-Term Stewardship Science and Technology Roadmap

The mission of DOE's Long-term Stewardship Program is to manage residual risks and reduce future environmental liabilities associated with the government's continuing operations at many DOE sites. Advances in science and technology will be needed to fulfill this stewardship commitment. The Idaho National Engineering and Environmental Laboratory (INEEL) has been directed by DOE to facilitate a national roadmapping process that will provide the scientific consensus for future research investments in the area of long-term stewardship.

From Cleanup to Stewardship

One of the most complicated environmental challenges facing the United States today is the cleanup and long-term care of sites that were contaminated as a result of atomic weapons production during World War II and the Cold War. The U.S. Department of Energy (DOE) is responsible for 144 such "legacy" sites, most of which still host a variety of radioactive and chemical wastes, hazardous materials and contaminated facilities. Significant progress has been made in cleaning up many of these contaminated sites, but cost-effective remedies for the larger, more complex sites are needed.

By 2006, cleanup is to be completed at 123 of the DOE 144 sites. The remaining 21 include many of the largest or most contaminated sites, some of which will not be completed until 2050. While total cleanup of smaller and less contaminated sites is feasible, most sites will still have residual levels of contamination after cleanup is completed. Stewardship activities are now in progress at over 40 sites, with this number expected to increase to 88 by 2006 and to 109 by 2050. (*From Cleanup to Stewardship: A companion report to Accelerating Cleanup: Paths to Closure, DOE/EM-0466, U.S. Department of Energy Office of Environmental Management, October 1999*)

Most of these sites will need engineered barriers and institutional controls for residual hazards. DOE will monitor these sites to ensure the barriers and controls continue to guard public health and protect the environment for the lifespan of the hazard. Given the long-lived nature of radionuclides and other residual hazards, it is reasonable to assume that at some sites long-term care will be required for centuries – or even millennia.

The Long-Term Stewardship Program

The mission of DOE's Long-term Stewardship Program is to manage these residual risks and reduce



DOE will contain and mark remaining hazards, then monitor the surrounding area to make sure hazards stay controlled so people can live their lives with confidence.

<http://lts.inel.gov/st-roadmap>



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future environmental liabilities associated with the government's continuing operations at many of these sites. As part of its stewardship ethic and vision, DOE is committed to protecting human health and the environment, sustaining natural and cultural resources, and enhancing the use of the Department's land and facilities for the public good. Advances in science and technology will be needed to fulfill this stewardship commitment.

A National Science and Technology Roadmap for Long-Term Stewardship

Federal investments in scientific research and engineering projects are needed to benefit contaminated DOE sites as well as hazardous and solid waste disposal sites across the United States. Rather than leave such investment decisions to individual agencies and independent institutions, a more thoughtful, coordinated approach to research planning is now underway. The Idaho National Engineering and Environmental Laboratory (INEEL) has been directed by DOE to facilitate a national roadmapping process that will provide the scientific consensus for future research investments in the area of long-term stewardship.

A 13-member Executive Committee that reflects a diversity of disciplines and interests is guiding the roadmap development. Four work groups have been formed to identify the common science and technology needs for contaminated sites.

Once the work groups understand and describe their respective research needs, a schedule for launching their priority projects will be established by consensus of the Roadmap Executive Committee. The draft roadmap document, scheduled for completion in August 2002, will:

- Reflect a national consensus on near-term (5 year) R&D needs.

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- Identify what S&T is needed, when it is needed and why it is needed. It will not identify who will do it, where to do it, or how to do it.
- Provide a strategy to plan and coordinate science and technology investments by interested agencies involved in long-term care of contaminated sites.

Your Involvement is Welcome

The public is invited to become engaged in this process by monitoring the website established for this program (<http://lts.inel.gov/st-roadmap>) and commenting on drafts of the roadmap as they are released. For more information on the roadmapping effort, please contact: Bruce Hallbert, INEEL Manager of Human Systems Engineering and Sciences, at 208-526-9867; hallbp@inel.gov or Brooks Weingartner, DOE Idaho, at 208-526-1366; weingacb@id.doe.gov. For mail inquiries, please write:

Roadmapping for Long-Term Stewardship

INEEL
Mail Stop 3605
P.O. Box 1625
Idaho Falls, ID 83415-3605

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